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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

23 DEC 2004

Applicant's or agent's file reference 11050P4 WO/CMB		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)			
Internation	onal app	ication No.	International filing date (day/month/year)	Priority date (day/month/year)
PCT/GB 03/02795 30		30.06.2003		28.06.2002	
Internation C11D3		ent Classification (IPC) or bo	oth national classification a	nd IPC	
Applican RECKI		NCKISER N.V. et al			
1. Th	his inter uthority	national preliminary exar and is transmitted to the	nination report has beer applicant according to A	n prepared by this Article 36.	International Preliminary Examining
2. Tł	This REPORT consists of a total of 4 sheets, including this cover sheet.				
×	This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).				
TI	These annexes consist of a total of 3 sheets.				
3. TI	his repo	rt contains indications re	lating to the following ite	ems:	
ı	\boxtimes	Basis of the opinion			
H		Priority			
[]]	ı 🗆	Non-establishment of	opinion with regard to no	ovelty, inventive st	ep and industrial applicability
I٧	/ 🗆	Lack of unity of invent			
٧	′ ⊠	Reasoned statement to citations and explanate	ınder Rule 66.2(a)(ii) wi ions supporting such sta	th regard to novelt tement	y, inventive step or industrial applicability;
V		Certain documents cit	ed		
	'II 🗆		international application		
V	'III 🗆	Certain observations of	on the international appli	cation	
Date of	submissi	on of the demand		Date of completion	or this report
27.01.2004		18.10.2004			
Name au	nd mailin ary exan	g address of the internation lining authority:	al	Authorized Officer	and the state of t
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/GB 03/02795

I. E	3asis	of t	he r	eport
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1. With regard to the **elements** of the international application (Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)):

	Des	escription, Pages						
	1-2	o	as originally filed					
	Cla	ims, Numbers						
	1-2	·	received on 12.06.2004 with letter of 10.06.2004					
	1-2	,	received on 12.06.2004 with retter of 10.06.2004					
2.	Wit lang	With regard to the language , all the elements marked above were available or furnished to this Authority in the anguage in which the international application was filed, unless otherwise indicated under this item.						
	The	ese elements were av	ailable or furnished to this Authority in the following language: , which is:					
		the language of a tra	anslation furnished for the purposes of the international search (under Rule 23.1(b)).					
		the language of pub	lication of the international application (under Rule 48.3(b)).					
		the language of a tra Rule 55.2 and/or 55.	anslation furnished for the purposes of international preliminary examination (under 3).					
3.		Vith regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:						
		contained in the international application in written form.						
		filed together with the international application in computer readable form.						
		furnished subsequently to this Authority in written form.						
		furnished subsequently to this Authority in computer readable form.						
		The statement that t in the international a	he subsequently furnished written sequence listing does not go beyond the disclosure pplication as filed has been furnished.					
		The statement that t listing has been furn	he information recorded in computer readable form is identical to the written sequence ished.					
4.	The	amendments have r	esulted in the cancellation of:					
		the description,	pages:					
		the claims,	Nos.:					
		the drawings,	sheets:					
5.		This report has been been considered to g	established as if (some of) the amendments had not been made, since they have go beyond the disclosure as filed (Rule 70.2(c)).					
		(Any replacement sh	neet containing such amendments must be referred to under item 1 and annexed to this					
3.	Add	dditional observations, if necessary:						

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/GB 03/02795

- V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- 1. Statement

Novelty (N)

Yes: Claims No:

1-27

Inventive step (IS)

Yes: Claims

Claims

1-27

Claims No:

Industrial applicability (IA)

Yes: Claims No: Claims 1-27

2. Citations and explanations

see separate sheet

International application No. PCT/GB 03/02795

EXAMINATION REPORT - SEPARATE SHEET

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

D1: WO-A-0129167 D2: GB-A-2140819

- 2. Novelty (Article 33(2) PCT)
- 2.1 D1, considered to be the closest prior art, discloses (cf. Formula C) a laundry detergent composition from which the subject-matter of claim 1 differs in that boron is not present.
- 3. Inventive Step (Article 33(3) PCT)
- 3.1 The problem to be solved by the present invention can be regarded as the need to provide enzyme-containing aqueous detergent compositions with improved stability without the use of boron compounds as stabilisers for environmental reasons.
- 3.2 D1 is concerned with improving the stability of aqueous enzyme-containing aqueous detergent compositions, however, boron compounds are required as stabilisers.
- 3.3 D2 is also concerned with improving the stability of aqueous enzyme-containing aqueous detergent compositions, yet although boron compounds are not necessarily present (cf. Example 3A), no water-soluble ionic salt is present either.
- 3.4 It would therefore not be obvious to a person skilled in the art to combine the teachings of D1 with the teachings of D2 in order to arrive at the solution to the above problem described in claim 1 of the present application and the subject-matter of claim 1 is therefore inventive.
- 3.5 Independent claim 27 concerns a method utilising the detergent compositions according to claim 1 and as such the subject-matter of claim 27 is also to be considered as being novel and inventive.





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CLAIMS

- 1. An aqueous boron-free detergent composition comprising an enzyme, a stabilising amount of an organic water-miscible solvent, wherein the composition comprises between 5 to 60% of water with at least 70% of the remainder of the composition comprising a water soluble ionic salt.
- A composition according to claim 1, wherein the enzyme is at least partially encapsulated within water-soluble particles in a gel, the particles comprising a water-soluble encapsulating agent, wherein the particles have a migration speed in the gel of less than one centimetre per month.
- 3. A composition according to claim 1 or 2, wherein the migration speed of the particles is less than 0.7 cm per month.
- 4. A composition according to claim 2 or 3, wherein the migration speed of the particles is less than 0.4 cm per month.
- 5. A composition according to any one of claims 1 to 4, wherein the composition has a viscosity greater than 4,000 mPas, more preferably greater than 6,000 mPas and most preferably greater than 10,000 mPas.
- 6. A composition according to any one of claims 1 to 5, wherein the gel contains a thickening agent.
- 7. A composition according to claim 6, wherein the thickening agent is polyacrylic acid.
- 8. A composition according to any one of claims 1 to 7, wherein the composition has a density of greater than 1.1 g/cm^3 , more preferably greater than 1.2 g/cm^3 and most preferably greater than 1.4 g/cm^3 .

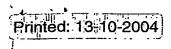




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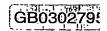
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- 9. A composition according to any one of claims 1 to 8, wherein the non-aqueous portion of the composition has a salt content of at least 80% and more preferably at least 90%.
- 10. A composition according to claim 9, wherein the salt is a phosphate, sulphate, carboxylate or hydroxycarboxylate.
- 11. A composition according to claim 10, wherein the salt is a citrate salt.
- 12. A composition according to any one of claims 1 to 11, comprising from 0.05 to 5% enzyme.
- 13. A composition according to any one of claims, 1 to 12, wherein the composition comprises a plurality of enzymes.
- 14. A composition according to any one of claims 2 to 13, wherein the particles contain an enzyme such that the ratio of gel enzyme to particle enzyme is between 5:1 and 20:1.
- 15. A composition in accordance with any one of claims 1 to 13, wherein the enzyme is a protease and/or an amylase.
- 16. A composition in accordance with any one of claims 1 to 15, wherein an enzyme stabilising aid is present in the gel in an amount of from 0.05 to 20% (expressed as a percentage based upon the whole composition).
- 17. A composition in accordance with claim 16, wherein the stabilising aid is a water-miscible organic solvent.
- 18. A composition in accordance with claim 17, wherein the water-miscible organic solvent is propylene glycol.









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- 19. A composition in accordance with claim 18, wherein the stabilising aid is a soluble calcium salt.
- 20. A composition in accordance with any one or claims 1 to 19, wherein the particles comprise a stabilising aid in an amount of from 40 to 70% of the weight of the particules.
- 21. A composition in accordance with claim 20, wherein the stabilising aid is a sugar and/or a starch.
- 22. A composition in accordance with any one of claims 2 to 21, wherein the gel and the particles have a difference in density of no greater than $0.9 \text{ g} / \text{cm}^3$, more preferably no greater than $0.6 \text{ g} / \text{cm}^3$ and most preferably no greater than $0.3 \text{ g} / \text{cm}^3$.
- 23. A composition in accordance with claim 22, wherein the particles contain a density aid.
- 24. A composition in accordance with any one of claims 2 to 23, wherein the particles contain a dye / a pigment
- 25. A composition in accordance with any one of claims 1 to 24, wherein more than 80% of the particles have a particle size from 50 to 1,000 micrometres, more preferably from 200 to 800 micrometres and most preferably from 400 to 700 micrometres.
- 26. A composition in accordance with any one of claims 1 to 25 for use in dishwashing and/or laundry applications.
- 27. A method of dishwashing and / or laundry comprising the use of a detergent composition in accordance with any one of claims 1 to 26.